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14. ABSTRACT The new Joint Health Service Support Vision of Force Health Protection attempts to improve health service support (HSS) to the Joint Force Commander by updating medical concepts to be more in line with current operational doctrine. This paper asks if this new HSS approach is an appropriate model for future JTF operations. Recent evidence indicates current HSS doctrine is a sound approach for future operations in five ways. First, HSS doctrine provides the JFC a healthy and fit force to engage the enemy. Second, stationing surgical assets far-forward with the fighting troops and new technology to control hemorrhaging saves lives. Third, the decreased medical footprint frees up transportation for other COCOM assets and allowed the HSS to get in to the TO faster and be prepared earlier in the deployment sequence. Fourth, better trained medical personnel save more lives. Finally, good HSS in caring for the warfighters coupled with the adroit ability of the MHS to execute Humanitarian Assistance in support of the combatant commander's TCP have proved to be especially invaluable tools in the combatant commander's toolbox.					
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**Health Service Support to the Combatant Commander:**  
**Subtle Bridge to Improved JTF Effectiveness**

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Departments of the Navy or Army.

Signature \_\_\_\_\_

8 May 2003

## **Abstract**

The new Joint Health Service Support Vision of Force Health Protection attempts to improve health service support to the Joint Force Commander by updating medical concepts to be more in line with the current operational doctrine of the warfighters. This paper asks whether the military health system's (MHS) current approach to providing health service support (HSS) for COCOM and JTF operations is an appropriate model for future operations. The evidence of recent HSS operations in support of the CENTCOM Commander indicates that current HSS doctrine is a sound approach for HSS future operations - as long as the MHS continues to review and revise the HSS principles based on continuing experience. The HSS principles improved support to the COCOM in five specific ways. First, the doctrine provided the JFC a formidable force to engage the enemy by ensuring a healthy and fit force deployed and that that force enjoyed layers of medical protection in the realm of disease and accident prevention. Second, the stationing of surgical assets far-forward with the fighting troops as well as new technology to control hemorrhaging saved lives. Third, the decreased footprint of medical forces freed up precious transportation assets for other COCOM assets and allowed the HSS to get in to the TO faster and be prepared earlier in the deployment sequence. Fourth, better trained medical personnel saved more lives. Finally, good HSS in caring for America's sons and daughters coupled with the adroit ability of the MHS to execute Humanitarian Assistance in support of the combatant commander's Theater Cooperation Plan (TCP) have proved to be especially invaluable tools in the combatant commander's toolbox.

## **Introduction**

"The whole of military activity must therefore relate directly or indirectly to the engagement. The end for which a soldier is recruited, clothed, armed, and trained, the whole object of his sleeping, eating, drinking, and marching is simply that he should fight at the right place and the right time.<sup>1</sup>" The engagement, as Clausewitz put it above, is the center of the commander's focus - his *raison d'être* so to speak. All of the combatant commander's efforts to align ends, ways, and means to achieve operational objectives are based on effectively utilizing the forces given to him to win the engagement, the campaign, and ultimately, the strategic victory.

Simply put, the goal of the combatant commander is to have the right forces at the right place and time, with the right training, fitness, and resources to do the right mission. The simplicity of this statement belies the complex nature of the work entailed to make it happen. On a deeper level, Clausewitz's statement intimates that the commander's supporting, but equally important, focus is the readiness of the individual soldier. This leads naturally to the combatant commander's concern for the health and welfare of the troops. The combatant commander relies heavily on the combat service support elements of the joint task force (JTF) to ensure this mission is done. In particular, medical units perform the unique role for the combatant commander known as force health protection (FHP). Force health protection is comprised of the military health system's (MHS) ability to deliver health care across the continuum of military operations.

How well is the military health system doing the FHP job today for the combatant and JTF commanders? Does the military health system provide optimal force health protection, thereby maximizing the availability and effectiveness of the individual soldier? Does the medical health system do its part to ensure the soldier is ready for the engagement in Clausewitzian terms? The

purpose of this paper is to explore how the current military health system measures up to the medical needs of joint operations worldwide by exploring lessons learned in recent decades and how effectively these lessons were employed in recent combatant command (COCOM) operations.

**Thesis:** Do the current joint MHS principles for JTF operations serve as an appropriate model for future operations?

### **Joint Vision 2020 and Joint Health Service Support Vision: The Big Picture**

To understand how health service support (HSS) is provided to the JTF, it is important to understand how HSS doctrine is developed by the policy makers at the strategic level and then devolved down to the medical planners at the operational level. Today's military health system on the battlefield is a direct result of doctrinal guidance promulgated in joint and service documents and supporting publications.

One of the primary documents written to guide medical planners is the Joint Health Service Support Vision (JHSS), written to support the Joint Vision 2020. The JHSS Vision describes how the MHS will support and perform health care delivery across the full spectrum of military operations. It is the conceptual framework for developing and providing medical services to support the combatant commander's wartime fighting mission<sup>2</sup>.

To link the Joint Health Service Support Vision to the Joint Vision 2020 and the National Military Strategy, the JHSS Vision spells out three medical pillars that correlate to the National Military Strategy pillars of Shape, Prepare and Respond. The three FHP pillars are a Healthy and Fit Force, Casualty Prevention, and Casualty Care Management<sup>3</sup>. Dr. William Winkenwerder, the Assistant Secretary of Defense for Health Affairs, outlined these pillars during a recent DoD brief

to members of Congress. Dr. Winkenwerder went on to describe how the military services were putting the three pillars into practice especially in light of the current situation in Iraq<sup>4</sup>.

To put the guidance of the JHSS Vision into practical terms for the JTF and service level planners, joint publications such as Joint Publication 4.02, Doctrine for Health Service Support in Joint Operations, and its related series, lay out joint medical operations for JTF planners. In order to achieve the Force Health Protection goals, the joint doctrine contains a set of health service support principles to guide the efforts of the operational planners. The Joint Force Surgeon and medical planners at every level use these principles to ensure the operational commander has a healthy and fit force, a beneficial approach to casualty prevention, and a responsive casualty management system as essential means of maximizing the effectiveness of limited JTF manpower.

<b>Joint HSS Principles (Jt Pub 4-02, Jul 01)</b>
Conformity
Continuity
Flexibility
Mobility
Responsiveness
Coordination

### **The Commander's Link to Force Health Protection**

Since the geographic combatant commander is responsible for the implementation of force health protection within his or her area of operations, how do the JHSS Vision and the three force health protection pillars get translated into useful advantage for the commander? The Joint Force

Commander (JFC) begins by appointing a Joint Force Surgeon (JFS) to coordinate and integrate the health service support mission among the participating forces. The JFS assesses the HSS needs and capabilities of the COCOM and provides guidance designed to enhance the effectiveness of the medical health system based on the six joint principles.

To understand how today's medical system tries to meet present operational needs at the COCOM and JTF level, it is helpful to look at both past and present HSS operations. The past helps planners understand how the principles used today in HSS were first discovered and introduced into doctrine. Reviewing present HSS operations enables planners to see and judge how well current HSS doctrine serves the COCOM and JFC around the world.

### **History of Military Medical Innovation**

A few historical examples demonstrate how innovative operational thinking served to develop better HSS in the combat environment over time. Combat medical care and the medical readiness of HSS assets have always been the missions of the MHS. It has been a continuous learning cycle of incremental improvements from the Revolutionary War to today's joint battlefields in Iraq and Afghanistan. The majority of the changes and innovations in medical care grew out of necessity. A prime historical example of a "medical battle lab" was the Civil War, where the nascent MHS was pushed to critical limits when tens of thousands of casualties were generated in a few hours. Many died needlessly: victims of slow, meager, and disorganized medical care combined with increasingly lethal methods of firepower.

In American wars of the 18<sup>th</sup> and 19<sup>th</sup> centuries, precious medical assets were kept far to the rear for their protection. The number of soldiers who died enroute to the surgeons at the field hospitals was high. Disease, especially in remote corners of the world like the Philippines, Cuba,

and Panama, claimed 5 to 50% of the fighting force<sup>5</sup>. Better operational employment of medical assets combined with disease prevention techniques developed in the first half of the 20<sup>th</sup> century, greatly increased survival rates. For example, in World War I the concept of mobile hospitals and mobile surgical teams located closer to the battle was initiated. This method of far-forward care was further developed in World War II with the development of the Surgical Hospitals, Mobile. In the Korean War, the concept of far-forward care was embodied in the Mobile Army Surgical Hospital (MASH). Tested under fire in Korea, the MASH was the Army's forward hospital through the Vietnam War and Desert Storm, undergoing only minor changes over the decades.

In the First Gulf War, two problems emerged that challenged the MHS to re-examine and revise its operational doctrine. First, while the MASH concept of proximity was sound, the mobility principle was found to be sorely lacking in the Persian Gulf. The vast desert expanses coupled with highly mobile armor and mechanized warfare, demonstrated that the MASH hospitals could not keep up with the units they supported. Secondly, there was little change from Vietnam to the First Gulf War in medical instruments, drugs, techniques or tactics. Except for the Army, which experimented with putting surgeons in the front lines during Desert Storm, wounded combat forces received first aid from combat medics but no surgical care until they were evacuated to a larger hospital far to the rear of the fighting units. At the end of the First Gulf War, the MHS realized that wounded soldiers were still too far from the surgical intervention critical to saving their lives as over-sized and under-mobile medical units lagged hours behind the front line units.

### **The Search for the "Best-Fit" Health Service Support**

Over time and through successive conflicts, the medical lessons of the past were used to change HSS doctrine and operations in support of today's JTF. Far-forward medical care with more



timely and organized evacuation and casualty treatment were devised as the MHS updated its operational doctrine based on past experience. These new methods, coupled with preventive medicine and medical technical advances, steadily lowered mortality. In fact, some argue that the improvements to health support for the fighting forces have been some of the greatest operational force multipliers in the last century as casualty losses were steadily reduced from 14.8 battle deaths and 10.1 non-battle deaths per 1000 in the First World War to 0.32 battle deaths and 0.13 non-battle deaths per 1000 in the First Gulf War<sup>6</sup>. Still, the search for the "best fit" HSS continues today. New weapon technology, weapons of mass destruction, and asymmetric warfare in far-away places continue to put pressure on the MHS to devise new and appropriate operational HSS methods.

Today's warfighting JFC expects and demands the best HSS for the mission. How ready was the military health system to support the JFC in Operation Iraqi Freedom? Did the medical principles learned over the past 225 years bring a new and improved military health system to the CENTCOM Commander as he prepared for operations? Is the current HSS doctrine as outlined in the joint doctrine principles sound? While it is too soon to completely evaluate the HSS lessons learned from Iraq and Afghanistan, some early indicators can be gleaned as to whether the current HSS doctrine is a sound approach to supporting future COCOM operations.

### **Lessons Learned for Operational HSS**

From an operational perspective, five important lessons have been learned and incorporated into the MHS since the First Gulf War<sup>7</sup>. Over the last 12 years, the discovery and implementation of these five lessons made significant impacts on the ability of today's combatant commander to feel "warm and fuzzy" about the medical support to the JTF as evidenced by HSS operations in Iraq and Afghanistan. Although the benefits of these lessons seem most obvious at the tactical

level of warfare, real benefits occur simultaneously at the operational level. Most important to remember is that it is at the operational planning level that these principles are put into play.

First, it pays to deploy a healthy force and ensure it is protected in the Theater of Operations (TO) through disease prevention and medical surveillance. Second, more astute employment of surgical assets on the battlefield saves lives. Third, improved HSS operational doctrine means a smaller medical footprint in the TO thereby freeing up critical and scarce transportation assets for other JTF missions. Fourth, medical personnel who are better trained in advanced trauma techniques will better casualty care. Finally, quality HSS, across the spectrum of JTF operations (humanitarian assistance to major combat) plays heavily into the combatant commander's ability to complete the overall mission particularly in the area of the Theater Cooperation Plan (TCP). Let's look at these five lessons more closely.

**Lesson One:** A healthy and fit force is essential to maximizing the force's fighting effectiveness to accomplish the JTF mission. The first two pillars of the force health protection concept are to deploy a healthy and fit force, and then protect and prevent disease in the TO. Through rigorous entry physicals to annual fitness testing, periodic medical and dental exams, and health promotion, today's service members maintain higher deployment readiness. Once in the TO, the HSS provides an array of medical technologies and capabilities to protect service members. The smallpox, anthrax, and other vaccine programs provide protection in high-threat areas. Medical surveillance systems also protect by monitoring theater-wide for environmental hazards - a legacy of the First Gulf War.<sup>8</sup> These concepts of providing and protecting a healthy force are the embodiment of the HSS principle of continuity.

**Lesson Two:** Closer is better. Based on the HSS principles of responsiveness and mobility, the faster a wounded soldier is seen by a medical provider after a traumatic injury, the

better the patient's chance at survival. Death is caused by war wounds in a trimodal pattern. First, some injuries cause such severe damage that death occurs within seconds or minutes and no medical care can change the outcome. In the second instance, the serious injury causes death if not definitively treated over the course of about an hour; it is here that the need for far-forward surgical care lies. If medical intervention is performed within that "Golden Hour", lives that would otherwise be lost can be saved<sup>9</sup>. In the third case, wounding requires treatment, but its delay past one hour will not be particularly detrimental or cause death<sup>10</sup>.

So, to be of the most benefit, surgical care has to be there and be there preferably as quick as possible within the Golden Hour. Operational HSS planners must understand that surgical care has to be mobile and not just moveable. It has to be where the soldiers and marines are as they are wounded. The largest number of battle deaths that could be saved are cases of hypovolemic shock - the marine bleeds to death. The treatment lies in stopping the bleeding and replacing the lost fluid volume. This must be done rapidly, hence the absolute requirement for far-forward medical care.

Both the Army and the Navy have placed surgeons in Iraq closer to the front lines than in any recent conflict. Operating out of backpacks, trucks, and tents, and more than a dozen small forward surgical units, these teams are expected to save the lives of gravely wounded soldiers, stabilizing them for transport to military hospitals in Kuwait and Germany. "We had gotten into the mind-set of huge, fixed-piece battles with huge fixed, full service hospitals" says U.S. Army Colonel David Burris, chairman of the Department of Surgery at the Uniformed Services University of the Health Sciences in Bethesda, Maryland. With rapid, modern ground wars, he goes on to say that the idea now is to keep the big hospitals at sea or in friendly nations and use the smaller surgical teams "to operate on those who wouldn't otherwise make the trip."<sup>11</sup> The Army

expects that bringing surgery closer to the fighting can prevent between 3 and 12% of soldier deaths due to bleeding<sup>12</sup>.

Currently, the Army's far-forward surgeons are found in the Forward Surgical Team (FST). First built within the Special Operations community, FSTs are now standard across the Army, Marines and Air Force in various configurations. Developed in response to the deployable hospital's inability to keep up with the rapid mechanized warfare in Desert Storm, the FST is both capable and mobile. All twenty personnel and organic equipment of an Army FST can be transported in four HMMWVs, moving forward and setting up with divisional medical companies to surgically support units in combat. FST surgeons operate on the most severely wounded as close to the front as possible. The surgical teams do the minimum operation necessary to stabilize patients for evacuation to a larger hospital. There, the patient may receive another operation to stabilize them for evacuation out of the theater or to CONUS. The Navy deployed a similar system, the Forward Resuscitative Surgical System or FRSS, to Iraq to support Marine combat units. To date, the FSTs and FRSSs have been employed with great success in Operations Enduring Freedom and Iraqi Freedom.

Still, it is not likely that every marine will be in close proximity to the limited numbers of FSTs or FRSSs when wounded. The service member's best chance for immediate aid will remain self-aid, buddy-aid, or aid from a combat medic. Again, proximity matters because the most likely medical skill needed when a soldier or marine is wounded is for someone to quickly control bleeding. Hemorrhage is the largest preventable cause of death among US service members in combat accounting for roughly half of all combat fatalities. Until recently however, techniques to control bleeding hadn't substantially improved since the Civil War. Cotton gauze bandages, pressure dressings, elevation, and tourniquets were standard procedures that didn't always do the

trick. A graphic demonstration of this shortcoming occurred ten years ago in Somalia when at least one soldier died in a vicious firefight on the streets of Mogadishu from blood loss incurred while pinned down and unreachable by medical evacuation teams. Medics with the soldier desperately applied the standard procedures to stop bleeding, but were unsuccessful.

Over the last several years, the military has funded a significant amount of research into bleeding-control techniques. This work has produced two new types of quick clotting bandages and powders. Both are available to US forces in the Persian Gulf, albeit in limited quantities<sup>13</sup>. All of these bleeding control improvements bring lifesaving techniques closer to the soldier and increase the chances that they will survive the trip to the military hospital. The principles of responsiveness and mobility for rapid casualty care require the JTF Surgeon and staff to ensure the proper distribution of these critical assets within the battle-space.

**Lesson Three:** Less is better. The expectation both from within and without the military is that combat HSS must be "state of the art" and be just as good as the care provided back in fixed facilities within the United States. Developed over decades, this expectation has caused the HSS footprint to balloon under the weight of all the latest, greatest medical gadgetry. Such care comes at the price of mobility and flexibility, which as we have already examined, are critical in providing the right care at the right place for the JTF. With the disappearance of the Soviet threat, the assumptions that served as the basis for planning the "medical footprint" suddenly evaporated. Wartime requirements for today's JTF environment are a mere fraction of the Cold War era.

What method was used to slim down the JTF medical footprint without sacrificing the patient's best chance at survival? In short, the MHS has redefined what HSS is "necessary" as opposed to "nice to have" in the JTF theater. As an example, Army medicine was premised on the idea that HSS provided in the TO should be definitive - meaning that all medical care the soldier

needed could - and should - be provided right in theater. This enabled more soldiers to be returned to duty faster - helping commanders by augmenting personnel replacement flows. Today's health support to the JFC however must be more mobile, flexible and responsive - in a word, smaller.

In one example of "slimming down" the medical footprint, the Army developed the Medical Reengineering Initiative (MRI). The MRI is the Army Surgeon General's on-going redesign process for converting the entire Combat Health System in support of Army Transformation and to inculcate medical lessons learned from real world medical operations. It is not just modernization, but a reorganization of the field medical force structure available to the warfighting combatant commanders. MRI operates on six major enablers. First, it reorganizes the medical units above the division and corps echelons. Second, it improves modularity of field medical units. Third, it enables split-based operations to allow better tailoring for JTF operations. Fourth, it provides scalable capability packages. Fifth, it provides manning for information management and technology. Finally, it reduces the theater medical footprint<sup>14</sup>. All of these initiatives over the last decade have improved HSS support under the principles of mobility, flexibility, responsiveness and conformity to the JFC concept of operations.

**Lesson Four:** Better-trained doctors, nurses, and medics save more lives. While this seems simplistic, when you consider that most military medical personnel spend their entire careers seeing patients in peacetime military clinics and hospitals it is clear that their exposure to trauma is extremely limited. Decades without a sustained conflict have left the military with a severe shortage of nurses and doctors with any battlefield experience. In fact, one of the biggest problems for battlefield medics and surgeons has been the lack of trauma experience.

Now, through a number of cooperative programs between all the services and civilian trauma centers, military medical personnel are gaining invaluable expertise in dealing with drastic

injuries in the emergency rooms of American hospitals. Many civilian trauma hospitals are overwhelmed with trauma patients while military hospitals have almost none. Gang violence in large urban areas especially has provided a fantastic, albeit tragic, setting for military medical personnel to gain trauma experience. In Miami, Dr. Tom Knuth, director of the Joint Trauma Training Center at Ryder Trauma Center, brings military medical personnel from all the services face-to-face with numerous gunshot wounds and traffic accidents where the tissue damage often resembles that of battlefield shrapnel wounds. Since January 2002, almost 300 military doctors, nurses and medics have integrated with the civilian staff to manage civilian patients. Says Dr Knuth, "This is about the closest to combat that you can get without actually being in combat."<sup>15</sup>

Additionally, the Army revised the training for the front-line medic to increase their ability to manage battlefield trauma. According to the Army Surgeon General, Lieutenant General James Peake, the new "soldier medic is different". After restructuring the training from 10 weeks to 16, the medics "report to their units better trained, with better airway and IV management skills."<sup>16</sup> The improved skills of these tactical level providers allow the JTF Surgeon to better manage the casualty care system within the TO.

**Lesson Five:** The final lesson is less concrete but just as important to the JFC. It is the nature of HSS as a weapon in accomplishing the JTF mission on the political front. Whether the JTF is involved in humanitarian assistance (HA) or full-scale combat operations, the eyes of the international media allow the world to instantly scrutinize almost every facet of JTF operations. As war is an extension of politics, the JFCs are acutely aware that how they employ their assets play out on the international political stage through the unblinking eye of the media. The "political" employment of medical assets comes to mind in two major areas: medical care to

injured troops and humanitarian assistance. The outcome of these medical operations can make a huge impact on the real, and perceived, success or failure of a JTF mission.

It is the unwritten, but unmistakable axiom that when American troops are committed to war, the best possible medical care will always be expected on the battlefield. Nothing can erode popular support back home like the sight of numerous dead American soldiers due to disorganized or inadequate medical care. Although uttered back in World War II by the Chief Surgeon in the European Theater, Colonel Paul Hawley, these words ring just as true today.

"Above all else.... the American people demand in war... that their soldiers be given superior medical service. No one thing can cause such a furor in the United States as the knowledge that adequate and proper hospital facilities are not being provided to their troops...<sup>17</sup>"

The other potentially political HSS issue for the JFC and staff is the realm of humanitarian assistance. With the combatant commander now responsible for the TCP, humanitarian assistance becomes a huge piece of the puzzle. The military medical system has given rise to a different type of warrior in the JTF ranks - one that is not armed with a weapon but a vaccination syringe, a dental tool, or a pediatric prescription. In the past decade, the MHS has used HA around the globe in support of COCOM and JTF combat and TCP operations to great success.

### **Problems Remaining with HSS to the JTF**

Despite great advances in the last decade and impressive results in current TOs, military health care for supporting the JFC requires constant evaluation and evolution. As always, there is room for improvement. There remain a number of HSS issues that need to be followed and new lessons discerned and incorporated into tomorrow's HSS doctrine in support of the JFC.

**Issue #1:** One of the toughest issues facing COCOM medical support is not even located within the JFC's TO. This is the dual focus of medical support between wartime and peacetime



missions. Like the ancient Roman god Janus, who had two faces looking in two different directions, the military health system is responsible to both the JTF and soldiers in the TO as well as to the soldiers and family members back home. The demands for peacetime medical care in CONUS do not stop during deployments<sup>18</sup>. This twofold demand for HSS strains support to both.

The introduction of TRICARE, with its inherent guarantees of care within certain timelines, has made major changes on military healthcare demand. During a major deployment with its loss of medical personnel from the post, the normal demands for healthcare must still be met with the remaining medical staff. The JTF's demand for far-forward care in the TO creates a vacuum back in CONUS. The vacuum must, by law, be filled and the continuity of healthcare continued. Medical units from the Reserves and civilian contracts fill the breach at home. Both sources cost money; the outlay for civilian contracts alone is enormous. What does this mean to the combatant commander? The financial drain impacts the ability of the military health system to commit more resources to the field side of medicine. The issue of peacetime healthcare demands versus support to the COCOM remains one of the most vexatious problems of the military health system. This issue probably requires Congressional attention as military medicine finds itself stretched thinner and thinner with the increasing OPTEMPO. In a system where peacetime healthcare dominates based on demand, it remains difficult to expend scarce resources for the operational side of medicine where the need manifests itself only with the occasional conflict.

**Issue #2:** Changes to patient evacuation policy carry potentially significant changes in JTF personnel replacement flows and demand for evacuation platforms. One of the keys under the old JHSS Vision was to provide definitive care to the theater and to return the greatest number of soldiers to duty as possible. In order to support rapid force projection and reduce the size of the medical footprint in theater, the concept has shifted to providing only essential care within the

theater and medically evacuating patients to CONUS or other safe havens for definitive care. This change means fewer soldiers will return to duty from the medical system to units within the COCOM generating instead a personnel shortage. Additionally, in a larger conflict with large casualty numbers, this policy will generate greater demand on evacuation assets to move patients out of theater on limited airframes. In recent operations such as Desert Storm, Enduring Freedom, and Iraqi Freedom, the number of casualties generated and evacuated out of the TO was small and the length of each conflict relatively short. The impacts on the personnel and evacuation systems were negligible. However, in some future conflict where the casualties are high and the fighting of longer duration, the impact on replacement operations could be significant. The reduction of soldiers returned to duty from medical facilities impacts both the personnel replacement and evacuation systems of the COCOM and requires the J1 and the JTF Surgeon to re-examine replacement flow.

**Issue #3:** Close up and immediately available surgical care is best for the patient and lowering mortality rates, however, how close is too close? Medical assets are precious - not in the sense that they should not be employed - but in the sense that they are difficult to replace once lost. While there is no argument that medical forces are there to save lives and that no risk is too great for most combat medics to undertake to get to that "one more patient", this gallant attitude is not without operational risk. The beauty of the heavier, less mobile medical assets farther back, was that they were less likely to be lost or attrited over a long campaign. How long does it take to replace a Forward Surgical Team once lost? Is the concept of far-forward surgical support logical in any combat operation or only in operations in which friendly forces enjoy operational superiority? Are the years of surgical training of most military surgeons worth risking by locating

them with far-forward combat units? Conversely, now that we have seen the dramatic results of lives saved by the surgeons being forward, can we ever again justify not having them forward?

**Issue #4:** A related issue is whether the lighter, more forward HSS force will work in a larger, prolonged conflict. Can the military health system sustain the concept in a war that lasts years instead of weeks? A lighter medical system assumes a very different kind of future battlefield, one dominated by a smaller, more lethal military that can use technology to dominate across the conflict spectrum. A longer view of history challenges that assumption. The specter of intense and protracted urban conflict, weapons of mass destruction used against military forces, and adversaries that choose asymmetrical warfare could still generate large numbers of casualties that require significant medical infrastructure within the TO<sup>19</sup>. While the light and mobile medical forces that keep pace with the forward battle lines now enable surgeons to get to patients faster and save more lives, are they robust enough to endure a long conflict? The new doctrine calls for a smaller footprint within the TO as demonstrated in Iraq and Afghanistan where the current medical structure was drastically reduced from the levels of even the First Gulf War. This doctrine means less redundancy and built-in ability to reconstitute lost medical assets. How long to mobilize, deploy, and set-up another Reserve Combat Support Hospital from CONUS once the previous CSH is destroyed in a chemical attack?

A close review of the robustness of the new light and mobile medical forces must be conducted in light of a potentially protracted and more lethal future conflict. The JTF Surgeon must balance the principles of mobility and flexibility against the principles of continuity and responsiveness during the JTF planning process. One recommendation worth considering to improve the robustness of the MHS would be to create a joint MHS. Would a "joint" MHS be better than the individual service health systems? Today, each service maintains a separate HSS

due to its own unique requirements within the battle-space. Still the culture of separate MHS may apply only in the old Cold War setting. The world has dramatically changed; the military operates almost exclusively as JTFs. Perhaps the time has come to examine the idea that a joint MHS would better serve the JTF.

### **Conclusions: A "Good Fit" Today May Not Fit So Well Next Time...**

The new JHSS Vision of force health protection and its three pillars of a healthy and fit force, casualty prevention, and casualty care management, has already improved upon previous versions by updating medical concepts to be more in line with the current operational doctrine of the warfighters. From new doctrine on the placement of medical units to improved HSS to the combatant commander's TCP, operational planning for JTF medicine has changed markedly, and as a result, the JFC is seeing improved HSS to the fighting forces in the TO.

This paper began by asking the question of whether the military health system's current approach to providing health service support for COCOM and JTF operations is an appropriate model for future operations. The evidence of recent HSS operations in support of the CENTCOM Commander indicates that the current HSS doctrine is a sound approach for HSS future operations - as long as the MHS continues to review and revise HSS operations in light of the HSS principles based on continuing experience. Using current HSS principles demonstrates improved support to the combatant commander in five specific ways. First, the doctrine provides the JFC a formidable force to engage the enemy by ensuring healthy and fit troops deploy and enjoy layers of medical protection once in the TO. Second, the far-forward stationing of medical assets with the fighting troops as well as new technology to control hemorrhaging saves lives. Third, the decreased footprint of medical forces, frees up precious transportation assets for other COCOM assets. The

more mobile and flexible medical units also allows the HSS to get in to the TO faster and be prepared earlier in the deployment sequence. Fourth, better-trained medical personnel improve survival rates. Finally, good HSS in the areas of caring for America's sons and daughters and humanitarian assistance are priceless. The adroit ability of the MHS to execute HA in support of the combatant commander's TCP have proved to be especially invaluable and all indications are that it will continue to be an incredibly powerful tool in the COCOM and JTF toolbox.

Something is working for the military health system in today's theaters of operation. Of the 250 seriously injured patients to date in Operation Enduring Freedom in Afghanistan, only one died after reaching surgical care. This makes the died of wounds rate the lowest in the history of war<sup>20</sup>. While the rates for died of wounds in Iraq are still being compiled, the initial data indicate that similar excellent results are expected. There is little doubt that advances in operational HSS doctrine improved medical support for the JFC at the operational level, as well as for JTF troops at the tactical level. True to Clausewitz's admonition about caring for the soldier so he can be ready for battle, today's combatant commander is being provided with a HSS force that is second to none in operational readiness and responsiveness.

## Endnotes

- 1 Carl von Clausewitz, On War, edited by Michael Howard and Peter Paret, Princeton NJ, Princeton University Press, 1984, 95
- 2 HQs, Department of the Army, "Force Health Protection in a Global Environment" Field Manual 4-02, February 2003, 1-1
- 3 Chief of the Joint Staff, "Doctrine for Health Service Support in Joint Operations" Joint Publication 4-02, 30 July 2001, v.
- 4 William Winkenwerder, Dr., Assistant Secretary of Defense for Health Affairs, "Force Health Protection" Speech to Congressional Panel, 13 March 2003, 1.
- 5 Richard A. Gabriel and Karen S. Metz. A History of Military Medicine: From Ancient Times to the Middle Ages Greenwood Press: New York, 1992, 32.
- 6 James C. Helmkamp, PhD, "United States Military Casualty Comparisons during the Persian Gulf War", Journal of Occupational Medicine, June 6, 1994, 613.
- 7 An array of medical technology and capabilities is being used to provide never before seen layers of protection to today's forces on the modern battlefield. COL John Holcomb, an Army surgeon who directs the Army Institute of Surgical Research in a San Antonio, said some innovations came from after-action reviews in which doctors analyzed data on why soldiers died, where they died, and how. In the intervening years, military doctors have taken a fresh look at battlefield medicine hoping to apply new technologies and updated trauma procedures to save the lives of wounded troops. Gina Kolata, "A Nation at War: Military Medicine; Armed with New Tools and Tactics, Doctors Head to the Battlefield." The New York Times March 30, 2003, B-2.
- 8 Winkenwerder, et al.
- 9 For trauma patients, surgeons refer to the "Golden Hour". By this they mean the period of time during which the human body can maintain homeostasis and statistically still have a chance to recover following severe, even massive, trauma provided that prompt resuscitative care, to include surgery if needed, is accomplished. American College of Surgeons. Advanced Trauma Life Support Program Committee on Trauma, American College of Surgeons, Chicago, Illinois; 1989
- 10 Ibid, 3.
- 11 Antonio Regalado, "Modern Medicine Sees Action Nearer to the Front", The Wall Street Journal Weds, April 2, 2003, A10.
- 12 Ibid.
- 13 The first bandage, developed by Army doctors and the American Red Cross, uses a bandage coated with fibrinogen and thrombin, two clotting factors that combine to produce a clot 10 to 20 times stronger than a natural clot. The second bandage uses chitosan, a sugary molecule that helps bind together the outer shells of shrimp and other crustaceans. The chitosan attracts red blood cells, clumping them into a solid clot. Both bandages work well in field trials but carry a high price tag - \$99 to \$1000 each depending upon the

- manufacturer. Other new technologies are also being tested such as quick clot powder carried by the Marines in the Gulf, injectable agents for controlling internal bleeding, and improved tourniquets. David P. Hamilton, "Advances in Battlefield Medicine May Save Soldier's Lives". The Wall Street Journal March 20, 2003, B1.
- 14 Website, Medical Reengineering Initiative Program Implementation Office, <http://mrmedforce.belvoir.army.mil>.
  - 15 Charles Arthur, "The Iraq Conflict: Advanced Medical Kit Makes Battlefield Wounds Less Deadly Than in the Last Gulf War". The Independent (London) , April 7, 2003, 6.
  - 16 Peake, James, LTG. Speech to Congressional Committee, March 13, 2003.
  - 17 Graham A. Cosmas and Albert E. Cowdry. United States Army in World War II: The Medical Department: Medical Services in the European Theater of Operations Center for Military History, United States Army, Washington, D.C. 1992, 11.
  - 18 When an infantry division deploys from Fort Hood, Texas, no one expects a like unit to appear to take their spot in the motor pools and ranges at Fort Hood. It is understood that they are simply not there. However, when the combat support hospital, forward surgical teams, dental units, and various other medical providers are pulled from the hospital and clinics at Fort Hood to deploy in support of that same infantry division, the expectation is that peacetime healthcare will somehow continue unaffected at Fort Hood. Prior to TRICARE, the patients remaining behind at Fort Hood were likely to find non-emergent health care limited or even non-available - complaining was futile, there was a war on somewhere.
  - 19 Scott Beaty, "The Revolution in Military Medical Affairs", *Parameters* Winter 1997-98, 8.
  - 20 Kolata, B-2.

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<sup>1</sup> Carl von Clausewitz, On War, edited by Michael Howard and Peter Paret, Princeton NJ, Princeton University Press, 1984, 95

<sup>2</sup> HQs, Department of the Army, "Force Health Protection in a Global Environment", Field Manual 4-02, February 2003, 1-1

<sup>3</sup> Chief of the Joint Staff, "Doctrine for Health Service Support in Joint Operations", Joint Publication 4-02, 30 July 2001, v.

<sup>4</sup> William Winkenwerder, Dr., Assistant Secretary of Defense for Health Affairs, "Force Health Protection" Speech to Congressional Panel, 13 March 2003, 1.

<sup>5</sup> Richard A. Gabriel and Karen S. Metz. A History of Military Medicine: From Ancient Times to the Middle Ages. Greenwood Press: New York, 1992, 32.

<sup>6</sup> James C. Helmkamp, PhD, "United States Military Casualty Comparisons during the Persian Gulf War", Journal of Occupational Medicine, June 6, 1994, 613.

<sup>7</sup> An array of medical technology and capabilities is being used to provide never before seen layers of protection to today's forces on the modern battlefield. COL John Holcomb, an Army surgeon who directs the Army Institute of Surgical Research in a San Antonio, said some innovations came from after-action reviews in which doctors analyzed data on why soldiers died, where they died, and how. In the intervening years, military doctors have taken a fresh look at battlefield medicine hoping to apply new technologies and updated trauma procedures to save the lives of wounded troops. Gina Kolata, "A Nation at War: Military Medicine; Armed with New Tools and Tactics, Doctors Head to the Battlefield." The New York Times, March 30, 2003, B-2.

<sup>8</sup> Winkenwerder, et al.

<sup>9</sup> For trauma patients, surgeons refer to the "Golden Hour". By this they mean the period of time during which the human body can maintain homeostasis and statistically still have a chance to recover following severe, even massive, trauma provided that prompt resuscitative care, to include surgery if needed, is accomplished. American College of Surgeons. Advanced Trauma Life Support Program. Committee on Trauma, American College of Surgeons, Chicago, Illinois; 1989

<sup>10</sup> Ibid, 3.

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<sup>11</sup> Antonio Regalado, "Modern Medicine Sees Action Nearer to the Front", The Wall Street Journal, Weds, April 2, 2003, A10.

<sup>12</sup> Ibid.

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<sup>16</sup> Peake, James, LTG. Speech to Congressional Committee, March 13, 2003.

<sup>17</sup> Graham A. Cosmas and Albert E. Cowdry. United States Army in World War II: The Medical Department: Medical Services in the European Theater of Operations. Center for Military History, United States Army, Washington, D.C. 1992, 11.

<sup>18</sup> When an infantry division deploys from Fort Hood, Texas, no one expects a like unit to appear to take their spot in the motor pools and ranges at Fort Hood. It is understood that they are simply not there. However, when the combat support hospital, forward surgical teams, dental units, and various other medical providers are pulled from the hospital and clinics at Fort Hood to deploy in support of that same infantry division, the expectation is that peacetime healthcare will somehow continue unaffected at Fort Hood. Prior to TRICARE, the patients remaining behind at Fort Hood were likely to find non-emergent health care limited or even non-available - complaining was futile, there was a war on somewhere.

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<sup>20</sup> Kolata, B-2.

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